

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
INFORMATION EXCHANGE FOR MARINE EDUCATORS

JANUARY 2017

This update is funded by the National Marine Sanctuary Foundation in partnership with NOAA's Ocean Exploration and Research Program, with additional support from the National Marine Protected Areas Center, to share information pertinent to the marine educator community. It is intended to encourage exchange of information and programs. We hope that it will also promote collaboration among the different educators addressing similar issues in their programs.

Please share this email with your colleagues and constituents. If you request materials or respond to a request for information, please mention that you learned about it from NOAA's Information Exchange.

The information included here has been compiled from many different sources, including eeNEWS@NAAEE, EEinGEORGIA, the Scout Report, scuttlebutt, NSTA Express, and others. We have verified web addresses, but make no guarantee that they will remain active. The Department of Commerce/NOAA does not necessarily endorse or promote the views or facts presented on these sites.

To subscribe or unsubscribe to this list, send information to include in the newsletter, or discuss further enhancements, please contact the editor directly at phyllis.dermer@noaa.gov, or by phone at (865) 932-5074

Collected archives and issues of the newsletter, past and present, are available at <http://marineprotectedareas.noaa.gov/resources/education/welcome.html#exchange>.

NOTABLE REFERENCES

Coastal Adaptation Strategies Handbook

The Coastal Adaptation Strategies Handbook, hosted on the Climate Adaptation Knowledge Exchange, summarizes the current state of National Park Service climate adaptation and key approaches for climate change adaptation in coastal areas in order to guide adaptation planning in coastal parks. The chapters focus on policy, planning, cultural resources, natural resources, facility management, and communication/education.

<http://www.cakex.org/virtual-library/coastal-adaptation-strategies-handbook>

Fostering Community Stewardship

The guide, A Reef Manager's Guide to Fostering Community Stewardship, published by the IUCN under a Creative Commons License, has been written to inspire and empower reef managers and community leaders to develop reef stewardship programs. It

supports stewardship as a way of empowering local communities to take a more active role in sustaining the natural resources on which they depend.

https://www.coris.noaa.gov/activities/stewardship/resources/Managers_Guide_Reef_Stewardship_ebook_smallest.pdf

Tourism and Hospitality Research

This special issue of the journal, Tourism and Hospitality Research, offers free access to articles on protected area tourism. Be sure to check out the archived editions, with focus on islands, business enterprises for sustainable tourism, and more.

<http://journals.sagepub.com/toc/thr/17/1>

PROGRAM OF THE MONTH

National Tsunami Hazard Mitigation Program

This website offers the latest tsunami event information, along with a myriad of resources for education and mitigation. Be sure to check out the Partner Web Resources with links to education and outreach materials from sources throughout the nation (scroll down or expand the table of contents). The Publications page offers best practices, a newsletter, and much more. While at first the website might seem sparse, it links to an abundance of information.

<http://nws.weather.gov/nthmp/index.html>

WEBSITE OF THE MONTH

Timelapse

Timelapse is a global, zoomable video that lets you see how the Earth has changed over the past 32 years. It is made from 33 cloud-free annual mosaics, one for each year from 1984 to 2016, which are made interactively explorable by Carnegie Mellon University CREATE Lab's Time Machine library, a technology for creating and viewing zoomable and pannable timelapses over space and time. This is fascinating.

<https://earthengine.google.com/timelapse/>

From the Bridge

Tsunami Resources

This month's Bridge-featured K-12 resource is the National Weather Service's online Compendium of Tsunami Education Resources. The DATA Activity, Tsunami: Waves of Destruction, reviews what separates tsunamis from other types of waves and guides students through estimating wave routes and landing times.

<http://nws.weather.gov/nthmp/documents/CompendiumTsunamiEd.pdf>

http://www2.vims.edu/bridge/DATA.cfm?Bridge_Location=archive0105.html

REQUESTS

Call for Technical Inputs to National Climate Assessment

The development of the Fourth National Climate Assessment is underway, and technical inputs can be submitted on sectoral, regional, and cross-cutting topics, along with special assessments and other literature. The deadline for input is January 15, 2017.

<http://www.globalchange.gov/news/call-authors-and-technical-inputs-fourth-national-climate-assessment-now-open>

Request for Standard-Aligned Marine Education Resources

Mark Friedman is coordinating a workshop on the correlation of marine biology and marine science resources to NGSS and Common Core standards at the national NSTA convention in Los Angeles. While he is aware of some resources (such as Shape of Life, Ocean Literacy, and Living Oceans Foundation), his goal is to present and make available as many resources as possible, expanding and placing them online. Please contact him if you are willing to share and send items (primarily for high school, but also for middle school) that you have already developed or as you develop them over the next few months.

Contact Mark L. Friedman at marklewisfriedman@gmail.com

GRANTS AND OPPORTUNITIES

Action for Nature Young Eco-Hero Awards

Action for Nature seeks applications from students ages 8-16 for its International Young Eco-Hero Awards Program. The awards program recognizes the accomplishments of young people whose personal actions have significantly improved the environment. Projects must concern advocacy, environmental health, research, or protection of the natural world. The deadline for application is February 28, 2016.

http://www.actionfornature.org/award_guidelines.aspx

ASFPM Collegiate Student Paper Competition

The Association of State Floodplain Managers Foundation offers its annual Collegiate Student Paper Competition, designed to encourage student engagement in floodplain management topics and identify individuals who have the potential to make lasting contributions to the field's body of knowledge. Winners receive scholarship funds and an opportunity to present their work at the annual ASFPM conference, April 30-May 5, 2017 in Kansas City, Missouri. The deadline for submission is January 31, 2017.

<http://www.asfpmfoundation.org/activities/scholarships/student-paper>

Beach Outfalls Challenge

This challenge is sponsored by the Mississippi Department of Environmental Quality to improve water quality in the Mississippi Sound. Individuals and teams can compete to create innovative solutions for untreated stormwater and improve water quality. The deadline for entry is March 15, 2017.

<http://beachoutfallschallenge.org/>

Burning Foundation Grants – Washington and Oregon

Burning Foundation Grants are awarded to organizations addressing issues in Washington and Oregon. Priority issue areas include protecting threatened rivers and forests, nurturing native fish populations, and conserving land and open space for ecological and recreational purposes. The deadline for letters of interest is January 17, 2017.

<http://fdnweb.org/burning/application-guidelines/>

CCLC Watershed STEM Education Partnership Grant Program

The National Marine Sanctuary Foundation offers the NOAA-21st CCLC Watershed STEM Education Partnership Grant program. The purpose of this program is to bring place-based and STEM-focused environmental education programming to new partners in an informal setting that connects U.S. Department of Education 21st Century Community Learning Centers with NOAA science. Eligible applicants are those that have participated in NOAA's B-WET program as a grant recipient or major partner. The deadline for application is February 11, 2017. A webinar will take place January 19, 2017. Information about the grant will be posted soon on the blog.

<https://www.marinesanctuary.org/about-us/blog/>

<https://events->

na11.adobeconnect.com/content/connect/c1/1137673199/en/events/event/shared/1583422165/event_landing.html?sco-id=1583465508

Change Travel Scholarships

Submit your idea to AFS-USA (formerly the American Field Service) for a volunteer project that could have a meaningful impact abroad. AFS-USA is offering ten full scholarships to spend two weeks with AFS making the winning projects come to life. Students in grades 8-12 are eligible. The deadline for submission is January 17, 2017.

<http://www.afsusa.org/project-change/>

CHEJ Small Grants Program

The Center for Health, Environment and Justice's Small Grants Program helps grassroots, community organizing groups build their capacity. The program is designed to reach people from low-wealth communities and communities of color who are impacted by environmental harms. The deadline for application is February 1, 2017.

<http://chej.org/smallgrants/>

Climate Adaptation Projects – Gulf Coast

The Climate and Resilience Community of Practice is offering a small grant for a climate adaptation project. Gulf Coast communities are encouraged to apply for funds to support a project that addresses a climate adaptation need or challenge in their community and can serve as a demonstration project for other coastal communities in the region. The deadline for a letter of intent is January 25, 2017.

http://masgc.org/assets/images/Submission_Guidelines_for_SOC_Proposals_final.pdf

Davidson Fellows Scholarship

The Davidson Fellows Scholarship awards scholarships to youth, 18 and under, who have completed a significant piece of work in categories including science, technology, "outside the box," and more. The work must be recognized as an outstanding accomplishment by experts in the field and have the potential to benefit society. The deadline for submission is February 8, 2017.

<http://www.davidsongifted.org/fellows/>

Drought Response Program

Two funding opportunities are available under the Drought Response Program. Applicants may request funding to develop a new drought plan or update an existing drought plan, or request technical assistance for the development of elements of the Drought Contingency Plan. The deadline for application is February 14, 2017

<http://www.grants.gov/web/grants/view-opportunity.html?oppId=290122>

<http://www.grants.gov/web/grants/view-opportunity.html?oppld=290104>

Five Star and Urban Waters Restoration Grant

The Five Star and Urban Waters Restoration Program seeks to develop nation-wide community stewardship of local natural resources, preserving these resources for future generations and enhancing habitat for local wildlife. Projects should seek to address water quality issues in priority watersheds, such as erosion due to unstable stream banks, pollution from stormwater runoff, and degraded shorelines caused by development. The deadline for application is January 31, 2017.

<http://www.nfwf.org/fivestar/Pages/home.aspx>

Fund for Publishing Open Access Marine Aquarium Research

The Marine Aquarium Societies of North America (MASNA) supports the Dr. Junda Lin Memorial Fund for Publishing Open Access Marine Aquarium Research. The goal of the fund is to offset the cost to students of publishing research related to marine ornamental aquaculture or the marine aquarium hobby, as open access articles. The quarterly deadlines for application start March 31, 2017.

<http://masna.org/masna-programs/memorial-publishing-fund/>

Goddard Prize for Environmental Conservancy

The New Leaders Initiative, a program from Earth Island Institute dedicated to identifying, supporting, and sustaining young environmental leaders, administers the Goddard Prize for Environmental Conservancy. The prize is awarded on a rolling basis to young people who are pursuing environmental projects, and who are looking for funding to bring their ideas to the next level.

<http://eeintennessee.org/resource/about.aspx?s=124499.0.0.37935>

John Bondus Grant for Native Fish Conservation

The North American Native Fishes Association's John Bondus Grant supports organizations that are working to conserve native fish populations, habitats, and knowledge. The deadline for nomination is January 31, 2017.

<http://www.nanfa.org/bondhus.shtml>

IRCP-CRIOBE Grants

The Institute for Pacific Coral Reefs and the Centre for Island Research and Environmental Observatory offer four grants in 2017 to young scientists (PhDs and Post-doctorates, under 35 years old) for research projects focused on the coral reefs of French Polynesia. Grants will be available to both French nationals and foreigners. The deadline for application is January 30, 2017.

<http://www.ircp.pf/en/applications-for-ircp-criobe-grants-2017-are-now-open/>

Keen Effect Grants

Projects funded by Keen Footwear increase responsible outdoor participation as a way to work towards building a strong community. Projects that introduce new audiences to the outdoors through responsible outdoor participation will receive special consideration. The deadline for application is June 10, 2017.

<http://www.keenfootwear.com/keen-effect.aspx>

Kinship Conservation Fellows

Kinship Conservation Fellows train experienced conservationists in the use of market-based principles to address environmental challenges. The program's ultimate aim is to

see large-scale conservation outcomes related to increased health of environmental systems and reduced environmental threats. Hurry - the deadline for application is January 16, 2017.

<https://www.kinshipfellows.org/program/apply>

Lowe's Toolbox for Education Grants

Lowe's Toolbox for Education offers grants to schools and parent/teacher groups. School projects should encourage parent involvement and build stronger community ties. Projects should fall into one of the following categories: technology upgrades, tools for STEM programs, facility renovations and safety improvements. The next deadline for application is February 9, 2017.

<http://www.toolboxforeducation.com/>

MATE ROV Competition

The theme of the 16th annual MATE International ROV Competition is Port Cities of the Future: Commerce, Entertainment, Health, and Safety, focusing on how ROVs are used to support port security, health, commerce, and tourism - now and into the future. There are four levels of competition. Register your team, find your regional events, and more. The final competition will take place June 23-25, 2017 in Long Beach, California.

<http://www.marinetech.org/missions-specs--scoring/>

National Ocean Scholar Program

This scholarship program provides tuition assistance for National Ocean Sciences Bowl students who have an interest in pursuing an ocean or a marine related topic area in their post-high school education. The deadline for application is April 21, 2017.

<http://nosb.org/opportunities/national-ocean-scholar-program/>

National Wildlife Refuge System Historic Preservation Award

This award recognizes hard work and outstanding results in the protection and use of cultural resources managed by the National Wildlife Refuge System. The deadline for nomination is February 3, 2017.

<https://www.fws.gov/historicPreservation/crp/index.html>

NMEA Awards

The National Marine Educators Association Awards honor educators and individuals who have shown exceptional leadership in the field of marine education:

- Johnette D. Bosarge Memorial Award
- Outstanding Teacher Award - For educators who have shown effective and innovative classroom teaching at all levels.
- James Centorino Award - For individuals who have shown distinguished performance in marine education by professionals not in the classroom setting.
- Marine Education Award - For outstanding leadership and work in any aspect in marine education on the local, regional, or national level.

The deadline for nominations is February 15, 2017.

<http://www.marine-ed.org/?page=awards>

P3 Student Design Competition

The P3: People, Prosperity and the Planet Student Design Competition highlights the use of scientific principles in creating innovative projects focused on sustainability. The EPA seeks applications proposing to research, develop, and design solutions to real

world challenges involving the overall sustainability of human society. The deadline for application is February 3, 2017.

<http://www.epa.gov/P3/>

Partners for Places

Partners for Places is a matching grant program that creates opportunities for cities and counties in the United States and Canada to improve communities by building partnerships between local government sustainability offices and place-based foundations. The deadline for application is January 30, 2017.

<http://www.fundersnetwork.org/partnersforplaces>

PBS LearningMedia Digital Innovators

The PBS LearningMedia Digital Innovators Program is a yearlong, free professional development program designed to foster a community of highly engaged, tech-savvy K-12 educators who are integrating digital media and technology to inspire learning. PBS will select one teacher from each state, the District of Columbia, and U.S. territories. The deadline for application is February 12, 2017.

<http://www.pbslearningmedia.org/digitalinnovators/>

President's Environmental Youth Awards

Sponsored by the EPA, the President's Environmental Youth Awards (PEYA) program recognizes young people for projects which demonstrate their commitment to the environment. The deadline for submission is March 1, 2017.

<http://www2.epa.gov/education/presidents-environmental-youth-award>

Protect Our Reefs Mote License Plate Grants – Florida

The primary focus of the 2017 Protect Our Reefs grant program will be on Coral Reef Restoration projects that significantly enhance the capabilities of coral reef ecosystem resource managers to more effectively utilize science-based information in promoting and implementing the restoration and long-term sustainable use of these ecosystems in an increasingly high temperature and more acidic marine environment. The deadline for proposals is March 1, 2017.

<http://mote.org/support/protect-our-reefs>

Solar in Your Community Challenge

The SunShot Prize will support dozens of teams across the country with cash prizes and technical assistance to demonstrate innovative, scalable business and financial models that can open new solar markets benefiting low and moderate income households and nonprofits. The deadline for application is March 17, 2017.

<http://www.solarinyourcommunity.org/en/page/applying-rules-en>

Technology Teacher Grants

K-12 classroom teachers applying for these grants write a short essay on what new technology would mean to their classroom and how they would use the grant to address a learning challenge. The deadline for submission is February 24, 2017.

<http://www.directpackages.com/teachers-grant/>

Texas Sea Grant Call for Proposals 2018-2020

The Texas Sea Grant College Program announces the FY2018-2020 Request for Research Proposals. Awards will support outcome-oriented research that spans broad areas of natural, physical, social, behavioral and economic sciences and engineering;

will improve the understanding, wise use and stewardship of Texas' coastal and marine resources; and will generate substantial social, economic and environmental impacts in Texas. The deadline for pre-proposals is January 20, 2017.

<http://texasseagrant.org/funding/2018-2020-rfp>

Wildlife Acoustics Scientific Product Grant

Wildlife Acoustics' mission is to support efforts in conservation and environmental stewardship. The Wildlife Acoustics grant program supports bioacoustics research. The next deadline for application is February 28, 2017.

<http://www.wildlifeacoustics.com/grant>

FELLOWSHIPS, INTERNSHIPS, AND TEMPORARY OPPORTUNITIES

ARC PhD Scholarships

Funding has been obtained from the Australian Research Council for a three-year project studying the effects of climate-driven range extensions of tropical coral reef fishes on temperate Australian coastal ecosystems. There are several PhD scholarship opportunities. While the deadline has passed, applications will be considered for the next round of scholarships later this year.

<https://www.nrem.iastate.edu/employment/files/jobs/PhD%20scholarship%20opportunities.pdf>

EPP/MSI Undergraduate Scholarship Program

The Educational Partnership Program (EPP) Undergraduate Scholarship Program provides scholarships for two years of undergraduate study to rising junior undergraduate students majoring in STEM fields that directly support NOAA's mission. Participants conduct research at a NOAA facility during two paid summer internships. Students attending Minority Serving Institutions are eligible to apply for the program. The deadline for application is January 31, 2017.

<http://www.noaa.gov/office-education/epp-msi/undergraduate-scholarship>

Great Lakes Summer Student Fellowships

The Cooperative Institute for Limnology and Ecosystems Research at the University of Michigan and partners offer twelve Great Lakes Summer Student Fellowships. Students from groups traditionally underrepresented in the aquatic sciences discipline and workforce are encouraged to apply. The deadline for application is February 14, 2017.

<https://ciler.snre.umich.edu/opportunities/student-fellowships/2017-great-lakes-summer-student-fellows-program-application-information/>

Gulf Research Program Early-Career Research Fellowships

The early-career research fellowship supports emerging scientists as they take risks on research ideas not yet tested, pursue unique collaborations, and build a network of colleagues who share their interest in preventing oil spills and in the well-being of coastal communities and ecosystems. These two-year fellowships are awarded to tenure-track faculty (or equivalent) at colleges, universities, and research institutions. The deadline for application is February 22, 2017.

<http://www.nas.edu/gulf/fellowships/early-career/index.htm>

Inspiring Girls Expeditions

Inspiring Girls Expeditions is accepting applications for free summer science and wilderness expeditions in Alaska and Washington for girls ages 16-17. Three teams of up to nine girls and three instructors will spend 12 days exploring and learning about mountain glaciers or fjords with tidewater glaciers. They'll conduct scientific field studies with professional glaciologists, oceanographers, artists, and mountaineers. The deadline for application is January 31, 2017.

<https://web.iarc.uaf.edu/2016/12/21/free-glaciology-and-marine-programs-for-girls-seek-applications/>

Nautilus Live Opportunities

Ocean Exploration Trust offers opportunities for students and educators to participate in the 2017 E/V Nautilus Expedition. Participants experience ocean exploration first-hand and share the excitement of discovery and research with their students and communities through the Science Communication Fellowship and Science & Engineering Internship Program. Hurry – the deadlines for application for the fellowships is January 13, 2017 and internships is January 20, 2017.

<http://www.oceanexplorationtrust.org/education>

NMS Internship – Silver Spring, Maryland

NOAA's Office of National Marine Sanctuaries has three openings for volunteer interns at their headquarters office in Silver Spring, Maryland. Volunteer internships may count towards course credit. Applications are accepted on a rolling basis; winter session interns can anticipate a mid January 2017 start date, while summer session interns can anticipate starting in mid-May 2017.

http://sanctuaries.noaa.gov/involved/volunteer_future.html

CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT

Building a Land Ethic Conference - Wisconsin

The Aldo Leopold Foundation and the University of Wisconsin will host the Building a Land Ethic Conference, June 22-24, 2017 in Baraboo, Wisconsin.

<https://www.aldoleopold.org/news-events/land-ethic-conference/>

Climate Reality Leadership Corps - Colorado

The Climate Reality Project will host the next leadership corps training March 2-4, 2017 in Denver, Colorado. The three day training, meals, and materials are free, but lodging and transportation are the responsibility of the participant. The deadline for application is January 24, 2017.

<https://www.climaterealityproject.org/training>

Data Science Orientation - Online

This free, self-paced six-week MOOC (Massive Open On-line Course) is part of the Microsoft Professional Program Certificate in Data Science. It offers an introduction to working with and exploring data using a variety of visualization, analytical, and statistical techniques.

<https://www.edx.org/course/data-science-orientation-microsoft-dat101x-1>

DataStreme Courses - Various

The American Meteorological Society's DataStreme Project is an expenses-paid professional development program for in-service K-12 educators. Graduate-level courses in meteorology, oceanography, and climate science are offered by Local Implementation Teams across the country. The spring course runs January 23-April 24, 2017; sign up as soon as possible for materials to arrive in time. Those with no Local Implementation Teams can be accommodated through distant learning connections. See the website for complete information.

<https://www.ametsoc.org/ams/index.cfm/education-careers/education-program/k-12-teachers/datastreme-program/datastreme-earth-s-climate-system/>

Deep-Sea Science in the Classroom – Online

Following this webinar, January 18, 2017, students will be able to utilize scientific methods to explore the deep sea coral communities found in West Coast National Marine Sanctuaries using research footage from Remotely Operated Vehicles. Be sure to check out upcoming webinars, and search the archives for others of interest.

<http://sanctuaries.noaa.gov/education/teachers/webinar-series.html>

EcoCareer Conference - Online

During the National Wildlife Foundation's Virtual EcoCareer Conference 2017: Building Pathways to Sustainable Careers, February 22-23, 2017, leading professionals will share knowledge on latest EcoCareer trends and current employment demand across a variety of green career fields.

<http://online.nwf.org/site/Calendar?id=108403&view=Detail>

Educator Workshop: Earth Science Workshop - California

NASA's Jet Propulsion Laboratory will host this free workshop, January 14, 2017 in Pasadena, California, for formal and informal K-8 educators. Participants will explore the impact of increasing global temperature on glaciers and sea level using satellite data and learn how to turn these resources, and others, into engineering, mathematics, and science lessons for students.

<http://www.jpl.nasa.gov/edu/events/2017/1/14/earth-science-workshop/>

EPA Climate and Health Resources - Online

The EPA will be hosting a webinar, January 11, 2017 to discuss the multiple climate and health related resources available on their website. These include communication kits and factsheets for populations of concern, state-by-state information and factsheets, and new reports such as the Extreme Heat Guidebook and Climate Change Indicators.

<https://naaee.org/eeopro/learning/webinars/epa-webinar-climate-and-health-resources>

European Coral Reef Symposium

The call for conference sessions and workshops for the International Society for Reef Studies-sponsored European Coral Reef Symposium, December 13-15, 2017 in Oxford, United Kingdom, is open. The deadline for submission is February 15, 2017.

<http://www.reefconservationuk.co.uk/ecrs-2017.html>

Exploring the Intersection between Oil Spill Science and Response - Online

The Sea Grant Oil Spill Science Outreach Program will host a free workshop, February 6, 2017 in New Orleans, Louisiana and online. Be sure to check out the downloadable publication, Frequently asked questions: Oil edition, along with many other outreach publications on oil spill science.

<https://gulfseagrant.wordpress.com/oil-spill-science-workshop-exploring-the-intersection-between-oil-spill-science-and-response/>
<https://gulfseagrant.wordpress.com/oilspilloutreach/publications/>

High School Marine Science Symposium – Massachusetts

The Massachusetts Marine Educators and Northeastern University, with additional support from Salem State University, offer two marine science symposia for high school students, March 9 and 15, 2017 in Boston and Salem, Massachusetts (respectively). The events aim to inspire interest in STEM through hands-on workshops, lightning talks, and more.

<http://www.northeastern.edu/cos/marinescience/outreach/high-school-marine-science-symposium/>

International Marine Debris Conference

The Sixth International Marine Debris Conference will be held March 12-16, 2018 in San Diego, California. Sign up to get updates.

<http://internationalmarinedebrisconference.org/>

InterpTech - California

InterpTech 2017 will take place May 1-4, 2017 in Pacific Grove, California. The National Association for Interpretation and California State Parks are partnering for three days of innovation, interpretation, and technology. The call for submissions is open.

http://www.interpnet.com/NAI/nai_events/InterpTech_Conference_CFP.aspx

Learning to Live with Climate Change - Online

NAAEE will offer this free webinar, Learning to Live with Climate Change: What Educators Need to Know, January 24, 2017. Register to attend or receive the recording if unable to attend. Be sure to submit questions in advance, as they will help shape the presentation.

<https://naaee.org/eeopro/learning/webinars/learning-live-climate-change-what>

National Adaptation Forum

The National Adaptation Forum, May 9-11, 2017 in Saint Paul, Minnesota, is a gathering of the adaptation minded. Limited travel support may be available. The deadline for application is February 17, 2017.

<https://www.nationaladaptationforum.org/>

NMEA Conference – Call for Presentations

The National Marine Educators Association 2017 Conference will take place June 25–29, 2017 in Charleston, South Carolina. The deadline for proposals is January 31, 2017.

http://www.marine-ed.org/page/NMEA_2017_Pres

Ocean Exploration Workshops – Various

NOAA's Ocean Exploration Program and partners offer Exploring the Deep Ocean with NOAA Professional Development Workshops for Educators. Participants will receive classroom-ready lessons, certificates of participation, and other resources. Contact the noted educator or check out the website for registration and more information.

- April 22, 2017 with the Aquarium of the Pacific in Long Beach, California. The deadline for registration is March 31, 2017. Contact Staci Wong at swong@lbaop.org

- April 22, 2017 with the South Carolina Aquarium, Charleston in South Carolina. The deadline for registration is March 31, 2017. Contact Jaime Thom at jthom@scaquarium.org
- April 29, 2017 with the National Aquarium in Baltimore, Maryland. The deadline for registration is April 7, 2017. Contact David Christopher at dchristopher@aqua.org
- May 6, 2017 with the Birch Aquarium at Scripps Institution of Oceanography in San Diego, California. The deadline for registration is April 14, 2017. Contact Cari Paulenich at cpaulenich@ucsd.edu

<http://oceanexplorer.noaa.gov/edu/development/development.html>

Science of Happiness - Online

Start the new year right and treat yourself to some happiness with this MOOC from the University of California, Berkeley. Through the eight-week, self-paced course, participants will learn science-based principles and practices for a happy, meaningful life.

<https://www.edx.org/course/science-happiness-uc-berkeleyx-gg101x-4>

Seminars on Science - Online

Registration is open for Seminars on Science from the American Museum of Natural History. Courses are co-taught by an experienced classroom teacher and a research scientist. The deadline for registration for Spring Session 1 is January 16, 2017; for Session 2, March 6, 2017. Science teachers may be eligible for funding for the Climate Change course.

https://docs.google.com/a/noaa.gov/forms/d/e/1FAIpQLSdh_jOYJbbZo5jJbHd3VCjGxFkd2ffXoG7ZBOUAoz0wu7Lj7g/viewform

<http://www.amnh.org/learn/>

Student Climate & Conservation Congress

The mission of the Student Climate & Conservation Congress (Sc3), June 25-July 1, 2017 in Shepherdstown, West Virginia, is to empower outstanding student environmental leaders with the skills, knowledge, and tools to address climate change and natural resource conservation challenges to better serve their schools and communities. Financial aid may be available. The deadline for application is May 15, 2017.

<http://www.greenschoolsalliance.org/sc3>

Summer Programs – Alabama

Dauphin Island Sea Lab Discovery Hall Programs promote conservation through education, research, and outreach. Through hands-on activities in marine habitats, people can see the impact of science on their daily lives. Many programs are available for both students and teachers. Teachers, check out Fins, Fishes, and Fisheries, Technology in Marine Science – ROVs, and more. Workshop registrations are refunded upon completion.

<http://www.disl.org/educational-programs/>

Winter Ocean Literacy Webinar Series - Online

The NMEA Ocean Literacy Committee is hosting a free three-part webinar series, beginning January 17, 2017. Each webinar will cover a different topic and topics will build on the one prior. Topics include Ocean Literacy Scope and Sequence, Alignment of the Ocean Literacy Framework with NGSS, and Organizing for Ocean Literacy.

<http://www.marine-ed.org/blogpost/1067768/262768/Guest-Blog-by-the-Ocean-Literacy-Committee-Join-our-winter-ocean-literacy-webinar-series>

Working in Teams – Online

The University of Queensland, Australia offers this free, self-paced MOOC starting January 23, 2017. The course is an introduction to teamwork skills for all disciplines that will help participants improve their own performance and that of their team.

<https://www.edx.org/course/working-teams-practical-guide-ux-teams101x-0>

EDUCATIONAL RESOURCES

Antarctic Report

The Antarctic Report is a New Zealand-based website reporting news and information on Antarctica and the Southern Ocean. Read about Type C Killer Whales, drones for research, and much more.

<https://www.antarcticreport.com>

Arctic Report Card

The Arctic Report Card is a peer-reviewed report that brings together the work of 61 scientists from 11 nations who report on air, ocean, land and ecosystem changes. This website hosts a collection of maps and images highlighting some key findings, a link to the complete report, and more.

<https://www.climate.gov/news-features/understanding-climate/noaas-2016-arctic-report-card-visual-highlights>

BackStory

From the Virginia Foundation for the Humanities comes BackStory, a radio show and podcast dedicated to exploring the history behind a current events, popular trends, and other contemporary phenomenon. While this isn't marine-related, it could be used to discuss how our understanding of what's true may change over time, and the importance of knowing the history behind an issue.

<http://backstoryradio.org>

Best Nonprofit Websites

The firm, Elevation, offers digital solutions to nonprofits. Their website hosts examples of non-profit websites in a variety of categories, including education/arts, environmental, and more. Check these out to spark some ideas for your own web presence.

<http://www.elevationweb.org/best-nonprofit-websites/>

Career Center – EcoLeaders Top 50: Inspiring the Next Generation

The National Wildlife Federation's EcoLeaders offers a Career Center with insights from professionals working in the field. Read their observations on developing project-based leadership skills and on the importance of declaring a personal mission, reaching out to potential mentors, and becoming involved in extracurricular activities. Free registration is required.

<http://www.nwfecoleaders.org/careercenter>

Climate Change and Human Health Literature Portal

The Climate Change and Human Health Literature Portal, managed by the National Institute of Environmental Health Sciences, is a knowledge management tool for locating

relevant scientific literature on the health implications of climate change. It provides access to a database of studies from around the world, published between 2007 and 2014.

<https://tools.niehs.nih.gov/cchhl/>

Climate Change: Vital Signs of the Planet

NASA's Global Climate Change: Vital Signs of the Planet website features a diverse set of resources related to the measurement, analysis, and dangers of global climate change. Climate Change Resources links to graphics and multimedia, educators resources, Climate Kids, and more. On the Graphics and Multimedia page, visitors find simulations, short documentaries, infographics, and interactive quizzes. The Educator page links to a variety of excellent resources. The kids' page offers a variety of games, crafts, and more.

<http://climate.nasa.gov/resources/graphics-and-multimedia/>

Climate Year in Review

Climate.gov's Beyond the Data offers a short list of some of the major "climate happenings" of 2016. Each happening includes what happened, why it matters, and beyond the data.

<https://www.climate.gov/news-features/blogs/beyond-data/beyond-2016-year-review>

CoralNet

CoralNet is a repository of and resource for benthic images analysis. The website implements computer vision algorithms which allow fully- and semi-automated annotation. It also serves as a repository and collaboration platform. Visitors can view public images by clicking on the interactive map.

<https://coralnet.ucsd.edu/>

Cruise to the Johnston Atoll

Follow the Schmidt Ocean Institute cruise to the Johnston Atoll to map the seafloor on R/V *Falkor*, December 29, 2016-January 16, 2017. Joining scientists onboard is a diverse team, including a cartoonist who draws an educational comic series covering maritime history and life at sea; a father-son duo working to promote ocean conservation; and others. Check out the cruise logs, team introductions, and more.

<https://schmidtocean.org/cruise/eyes-testing-uavs-mapping-johnston-atoll/>

Elementary GLOBE

Elementary GLOBE introduces K-4 students to the study of Earth System Science. The instructional unit includes science-based storybooks designed to introduce students to key concepts in climate, water, soil, clouds, seasons, aerosols, and Earth system studies. In addition, there are classroom learning activities complementing the science content covered in each storybook. Arabic, English, French, German, and Spanish translations of some of these books and teacher's guide are available on the website.

<https://www.globe.gov/web/elementary-globe>

Emerging Technologies for Observing Systems

The NOAA Observing System Council held a workshop on Emerging Technologies for Observing Systems in July, 2016 as the first in a series of regular workshops aimed at instilling agility and infusing new technology in the NOAA observing system portfolio. Presentations were divided into Space, Atmosphere, Terrestrial, and Ocean sessions.

The PowerPoints and pdfs of posters, along with the workshop report, are available for download.

<https://nosc.noaa.gov/emerging-tech-workshop.php>

Esri Ocean GIS Forum Proceedings

This website hosts proceedings from the 2016 Esri Ocean GIS Forum conference, November 1–3, 2016 in Redlands, California. The presentations highlight trends in maritime and coastal geospatial analytics and the vision for its continued placement in scientific discourse.

<http://proceedings.esri.com/library/userconf/oceans16/index.html>

Explaining Extreme Events from a Climate Perspective

This special report in the Bulletin of the American Meteorological Society presents assessments of how climate change may have affected the strength and likelihood of individual extreme events of 2015.

<http://www.noaa.gov/media-release/scientists-strong-evidence-human-caused-climate-change-intensified-2015-heat-waves>

Extreme Weather E-Forum – Mid-Atlantic

Created especially for high school environmental science and biology students, this forum provides an opportunity to investigate the relationship between climate and extreme weather and think more critically about what it means to become more resilient. The E-Forum will run from March 15 to April 28, 2017. While priority will be given to schools located in the coastal portion of the Delaware River watershed, other Pennsylvania or Mid-Atlantic schools are invited to participate as space permits. The deadline for registration is February 3, 2017.

<http://easternpaseagrant.org/extreme-weather-e-forum/>

Federal Resources for P-12 Educators - Online

This webinar, held November 1, 2016 by educators from the U.S. Department of Energy, NOAA, and the Smithsonian Science Education Center, discussed professional development opportunities as well as tools and resources for use in classrooms. The webinar is archived on YouTube. Be sure to fill out the post webinar survey, as it helps to inform future events.

<https://www.youtube.com/watch?v=g9zPtGtXVo0&feature=youtu.be>

FGNMS Education – For Teachers

The Flower Garden Banks National Marine Sanctuary hosts a myriad of educational materials. The For Teachers page links to curriculum on octopus adaptations, reef monitoring, and more. Lessons and activities focus on coral, plastics, and much more, while a variety of posters can be downloaded for the classroom.

<http://flowergarden.noaa.gov/education/teachers.html>

Fish Tech Online

The University of Alaska, Southeast hosts a six-module Fish Tech course. It is available for viewing for free. Modules include an overview of Alaska fisheries, salmon culture, fisheries management, and more.

<http://uashome.alaska.edu/~fishtech/fishtechcourselibrary.html>

Freebies for Science Teachers

NSTA offers Freebies for Science Teachers, with links to books, lessons, and more. Check out the Ocean Literacy Short Course, Free Technology for Teachers, and more. Use the keyword search to narrow down the selections. Be sure to check this out periodically.

<http://www.nsta.org/publications/freebies.aspx>

Global Weirding

Global Weirding is produced by KTTZ Texas Tech Public Media and distributed by PBS Digital Studios. New episodes will air every other Wednesday and be posted on YouTube and Yale Climate Connections.

<https://www.youtube.com/channel/UCi6RkdaEggRVKi3AzidF4ow>

<http://www.yaleclimateconnections.org/tag/global-weirding/>

ICRS 13 Proceedings

The Proceedings from the 13th International Coral Reef Symposium, June 19-24, 2016 in Honolulu, Hawai'i, have been published and are available online. In addition, videos of the plenary talks are available.

<http://coralreefs.org/conferences-and-workshops/proceedings-of-icrs13-2016/>

Implementing the Next Generation Science Standards

The American Geosciences Institute's Center for Geoscience and Society and the National Association of Geoscience Teachers are collaborating with other organizations and member societies to support implementation of the Earth and space science Next Generation Science Standards. Check out upcoming and archived webinars, join the email list, and more.

http://nagt.org/nagt/profdev/workshops/ngss_summit/index.html

Japanese Mini Submarines at Pearl Harbor

On the morning of December 7, 1941, U.S. naval vessels and aircraft on patrol outside Pearl Harbor spotted a partially-submerged submarine trying to enter the harbor. The destroyer USS *Ward* fired on the sub, sinking it. On December 7, 2016, a research team coordinated by maritime archaeologists and scientists with NOAA's Offices of Ocean Exploration and Research and National Marine Sanctuaries used an ROV to visit the wreck site and documented its condition, and live-streamed the event. Read about the the subs and view video, photos, and more.

<http://sanctuaries.noaa.gov/maritime/japanese-mini-subs/>

Lab Out Loud

Lab Out Loud is a podcast and blog that discusses science news and science education with leading scientists, researchers, science writers, and others. Check out episodes on citizen science, science in film, and more.

<http://laboutloud.com/>

Leopold Education Project

The Leopold Education Project is an interdisciplinary environmental education curriculum inspired by Aldo Leopold's land ethic. The curriculum guide includes 20 lessons that build skills in observation, plant and animal identification, land stewardship, natural history, writing and reflection, and environmental values. Materials are distributed by a network of State Coordinators who organize training workshops and have access to discounted rates on materials.

<https://www.aldoleopold.org/teach-learn/leopold-education-project/>

Meta-Calculator

For mathematics teachers and students, Meta-Calculator is a free, online graphing, matrix, scientific, and statistics calculator.

<http://www.meta-calculator.com>

MPA Financing

MPA News is running a two-part series on MPA financing. Part 1, published in December, offers an introduction, links to a library of resources, and more. The newsletter highlights case studies and interviews.

<https://mpanews.openchannels.org/mpanews/issue/december-2016-183>

NASA Intern Stories

This website features stories from NASA interns across the agency.

<https://www.nasa.gov/education/interns/index.html>

National Recreation Trails Database

The online database from American Trails contains information on over 1200 National Recreation Trails, and covers all 50 states. Information posted about each might include directions, surface, maps and photos, and much more.

<http://www.americantrails.org/NRTDatabase/>

Ocean Exploration Education Highlights

This year, the NOAA Ship *Okeanos Explorer* will be investigating the biological diversity and geology found in deepwater environments of the U.S. central and western Pacific Ocean. Bring your students along via the Internet as scientists, technicians, and engineers - at sea and on shore - conduct undersea mapping and ROV explorations of these largely unexplored regions of the planet.

<http://oceanexplorer.noaa.gov/okeanos/explorations/2017-overview/welcome.html>

Oceanscape Network

This website from the Oregon Coast Aquarium uses technology to connect high school students and teachers to science, nature, and outdoor experiences. Students can explore the Oregon Coast or the larger Pacific Ocean, visit major landmarks and ecosystems, submit sightings of wild animals, or use the Global Positioning System for high-tech exploration of outdoor areas. In addition, educators can create online student communities, facilitate guided inquiry projects, and access lesson plans that address ocean literacy principles.

http://oceanscape.aquarium.org/?_ga=1.174968738.148691484.1484071521

OER Video Portal

NOAA's Office of Ocean Exploration and Research offers the OER Video Portal which allows access to video segments and highlights recorded onboard NOAA Ship *Okeanos Explorer* during expeditions conducted from 2010 through 2016. Portal users can search for, discover, preview, and/or directly download low-resolution video files and place orders for full-resolution video files.

<https://www.nodc.noaa.gov/oer/video/>

Okeanos Explorer Mapping Expedition

From January 18-February 10, 2017, the NOAA Ship *Okeanos Explorer* will conduct bathymetric mapping using multibeam sonar starting in Honolulu and concluding in Pago Pago, American Samoa. The ship will pass through the Kingman/Palmyra and Jarvis Units of the Pacific Remote Island Marine National Monument and Tokelau. Be sure to continue to follow the ship's explorations as it moves through the waters of American Samoa, February 16-March 1, 2017.

<http://oceanexplorer.noaa.gov/okeanos/explorations/explorations.html>

Online Education Program Evaluation

My Environmental Education Evaluation Resource Assistant (MEERA), from the University of Michigan, is an online evaluation consultant created to help users evaluate their environmental education program.

<http://meera.snre.umich.edu/>

Open Resource Videos

Edeos Digital Education in Germany offers Open Educational Resources, learning and teaching materials that can be used, changed, and distributed free of charge. They offer several short videos available in English, including STEM Explains the World!, Awesome Oceans, and more.

<http://edeos.org/en/downloads-erklavideos-unterrichtsmaterialien/>

Responses to Climate Change

The Climate Change Resource Center from the USDA Forest Service offers basic climate change educational resources along with tools, videos, a library with an annotated bibliography and extensive list of external links, and more. The latest module, Responses to Climate Change: What You Need to Know, provides a brief overview of adaptation options for resistance, resilience, and transition, and how to incorporate these ideas into natural resource planning and activities.

<https://www.fs.usda.gov/ccrc/education>

Sidedoor

The Smithsonian Institution offers the Sidedoor podcast dedicated to science, art, history, humanity and where they unexpectedly overlap. The podcast explores a wide range of issues in the form of twenty-minute episodes. Visitors can listen to podcasts in full and check out related resources from the Smithsonian's collections and other sources. Spend some time here.

<https://www.si.edu/sidedoor>

Urban EE Colloquium - Online

These short video lectures accompany chapters from the upcoming book, Urban Environmental Education Review. Topics cover School Partnerships, Environmental Arts, and More. Check back as more videos are added.

<https://naaee.org/eepr/resources/urban-ee-colloquium>

Urban Wildlife Conservation Program Videos

The National Wildlife Refuge Association offer seven videos about urban refuges; additional urban refuge videos will be released later this year.

https://www.youtube.com/playlist?list=PLZb5DyVcCk97sQYhdSKnSORyXv__mgozr

Visualizing Change

This website offers a toolkit for informal educators using visual narratives on climate change. It offers narrative scripts; visualizations, videos, and more; along with other climate science resources. Topics include the climate-ocean connection, extreme weather, and more. Be sure to check out the webinar, January 25, 2017.

<http://www.vischange.org/>

Watershed Action

The Center for Global Environmental Education's Watershed Action: Service Learning Projects for Students website helps teachers of grades 6–12 design service learning projects that involve students in the protection and cleanup of watershed environments. The website links to water quality curricula and a pollution prevention project guide.

http://cgee.hamline.edu/watershed/action/projects/public_ed.htm

Weather and Climate Disasters in the U.S.

NOAA's National Centers for Environmental Information tracks U.S. weather and climate events that have great economic and societal impact. Since 1980, the U.S. has sustained 203 weather and climate disasters where the overall damage costs reached or exceeded \$1 billion; the cumulative costs for these 203 events exceed \$1.1 trillion. The 2016 total was the second highest, behind the 16 events that occurred in 2011. These events included drought, wildfire, inland floods, severe storms, and a tropical cyclone.

<https://www.climate.gov/news-features/blogs/beyond-data/2016-historic-year-billion-dollar-weather-and-climate-disasters-us>

<https://www.ncdc.noaa.gov/billions/>

Wild Weather Adventure

The online Wild Weather Adventure game for kids lets them board a weather research blimp to explore Earth and its weather. Luck and knowledge help the journey along.

<http://spaceplace.nasa.gov/wild-weather-adventure/en/>

Writing for New Media

Part of Annenberg Learner's Reading & Writing in the Disciplines, the free lesson, Writing for New Media, asks students to create podcasts about issues and stories from their school community while learning effective journalistic practice. Students develop interview, research, writing, and technological skills. Be sure to check out the rest of the course.

<http://www.learner.org/courses/readwrite/video-detail/writing-new-media.html>

INITIATIVES, JOURNALS, and MORE

Exotic Species Sighting Form

REEF offers this form to record sightings of non-native/exotic/invasive species while diving. It can be used to report details on any marine species, including but not limited to Indo-Pacific Lionfish. Recently, the Rapid Response Team removed a non-native Onespot Rabbitfish from Florida waters within 24 hours of its reporting. The rabbitfish, a venomous fish with a voracious appetite, is the 36th non-native marine fish documented in Florida waters through the program, and its removal was the fifth successful rapid response effort led by REEF.

<http://www.reef.org/programs/exotic/report>

Ocean Ambassador Program

SEVENSEAS is recruiting students to become Ocean Ambassadors at their college or university. Each month, ambassadors will be responsible for hosting an ocean-themed event on campus, with the goal to spread the word about ocean conservation and travel. Additionally, ambassadors should plan to discuss the content of SEVENSEAS with their peers each month.

<http://www.sevenseastravelmagazine.com/ocean-ambassadors>

Open Science Journal

Open Science Journal is a new, multidisciplinary open access journal which accepts scientifically rigorous research, regardless of novelty. The journal's broad scope provides a platform to publish primary research, including interdisciplinary and replication studies as well as negative results. The deadline for submission for the next issue is February 28, 2017.

<http://osjournal.org/>

Resilience Dialogues

Communities and organizations might realize the need to move ahead with resilience planning, but need help doing so. The Resilience Dialogues website can put community leaders in contact with a range of scientists and resilience professionals to answer questions, provide custom information and solutions, and share their experiences.

<http://resiliencedialogues.org/>